



Appl. No. 09/473,055

Amendments to the Claims

1-6. (Canceled)

7. (Currently Amended) A method for producing a pulp sheet comprising the steps of  
taking a ~~composition~~ compound for improving paper making quality  
~~wherein said composition comprises a compound and a pulp blend,~~  
wherein

said compound has a lyotropic degree as defined below of not less than 4%, and

said compound provides the following paper quality improving properties (i) to (iii):

(i) a standard improved bulky value of at least 0.02 g/cm<sup>3</sup>,

(ii) a standard improved brightness of at least 0.7 point,

and

(iii) a standard improved opacity of at least 0.7 point;

and wherein the

lyotropic degree (%) =  $(\alpha_0 - \alpha) / \alpha_0 \times 100$

wherein

$\alpha$  is the water content in a wet sheet obtained by adding 5 parts by weight of the compound to 100 parts by weight of ~~the~~ pulp ~~blend~~ and subjecting the pulp ~~blend~~ to papermaking; and

$\alpha_0$  is the water content in a wet sheet obtained by subjecting the pulp ~~blend~~ to papermaking without adding the compound to the pulp; ~~blend~~ and

adding the compound and an agent that promotes fixation of the compound onto the paper sheet to ~~the~~ a material pulp before or during ~~the~~ a papermaking step, and

producing a pulp sheet.

8-9. (Canceled)

10. (Currently Amended) A method for producing a pulp sheet, modified to satisfy the following properties (1) to (3),

- (1) improved bulky value of at least 0.02 g/cm<sup>3</sup>,
  - (2) improved brightness of at least 0.7 point, and
  - (3) improved opacity of at least 0.7 point
- said method comprising:

adding internally a compound having a lyotropic degree of not less than 4% and an agent that promotes fixation of the compound onto the paper sheet before or in a papermaking step into a material pulp slurry, and

subjecting the pulp to a papermaking:

wherein said lyotropic degree is defined by

$$\text{lyotropic degree (\%)} = (\alpha_0 - \alpha) / \alpha \times 100$$

wherein

$\alpha$ : the water content in a wet sheet obtained by adding 5 parts by weight of the compound, which is ~~the~~ a paper quality improver for the papermaking, to 100 parts by weight of pulp, and

$\alpha_0$ : the water content in a wet sheet obtained by subjecting pulp to the papermaking without adding the compound, which is the paper quality improver for the papermaking, to the pulp.

11. (Canceled)

12. (Currently Amended) A modified pulp sheet which satisfies the following properties (1) to (3),

(1) improved bulky value of at least 0.02 g/cm<sup>3</sup>,

(2) improved brightness of at least 0.7 point, and

(3) improved opacity of at least 0.7 point,

wherein said pulp sheet is obtained by internally adding the compound having the lyotropic degree of not less than 4% and an agent that promotes fixation of the compound onto the paper sheet into a material pulp slurry before or in ~~the~~ a papermaking step, and wherein said lyotropic degree is defined by

$$\text{lyotropic degree (\%)} = (\alpha_0 - \alpha) / \alpha \times 100$$

wherein

$\alpha$ : the water content in a wet sheet obtained by adding 5 parts by weight of the compound, which is the a paper quality improver for the papermaking, to 100 parts by weight of pulp, and

$\alpha_0$ : the water content in a wet sheet obtained by subjecting pulp to the papermaking without adding the compound, which is the paper quality improver for the papermaking, to the pulp.

13-14. (Canceled)

15. (Currently Amended) A method for producing a pulp sheet comprising the steps of:

taking a ~~composition~~ compound for improving paper making quality ~~wherein said composition comprises a compound and a pulp blend,~~

wherein

~~said pulp blend contains a deinked pulp in an amount of 10% or more by weight in a material pulp and~~

said compound has a lyotropic degree as defined below of not less than 4%, and

said compound provides the following paper quality improving properties (i) to (iii):

(i) a standard improved bulky value of at least 0.02 g/cm<sup>3</sup>,

(ii) a standard improved brightness of at least 0.7 point,  
and

(iii) a standard improved opacity of at least 0.7 point;  
and wherein the

lyotropic degree (%) =  $(\alpha_0 - \alpha) / \alpha_0 \times 100$

wherein

$\alpha$  is the water content in a wet sheet obtained by adding 5 parts by weight of the compound to 100 parts by weight of the pulp ~~blend~~ and subjecting the pulp ~~blend~~ to papermaking; and

$\alpha_0$  is the water content in a wet sheet obtained by subjecting the pulp ~~blend~~ to papermaking without adding the compound to the pulp ~~blend~~; and

adding the compound and an agent that promotes fixation of the compound onto the paper sheet to the a material pulp before or during the a papermaking step, wherein said material pulp contains a deinked pulp in an amount of 10% or more by weight in the material pulp, and

producing a pulp sheet.

16-17. (Canceled)

18. (New) The method for producing a pulp sheet according to claim 7, wherein the agent that promotes fixation of the compound onto the paper sheet is selected from the group

consisting of aluminum sulfate, a cationic starch, a compound having an acrylamide moiety and polyethylene imine.

19. (New) The method for producing a pulp sheet according to claim 7, wherein the pulp sheet is used for a newspaper roll, a paper for printing and data, wrapping paper, or a paperboard.

20. (New) The method for producing a pulp sheet according to claim 7, wherein the pulp is partially deinked.

21. (New) The method for producing a pulp sheet according to claim 7, wherein said compound provides the following paper quality improving properties (i) to (iii):

(i) a standard improved bulky value of at least  $0.02 \text{ g/cm}^3$ ,

(ii) a standard improved brightness of at least 0.9 point,

and

(iii) a standard improved opacity of at least 0.9 point.